Contents of volume 420

No. 1 (pp 1–126) published January 31, 1992
No. 2 (pp 127–230) published February 24, 1992
No. 3–4 (pp 231–416) published March 25, 1992
No. 5–6 (pp 417–624) published April 30, 1992

This volume contains:

Supplement of the Deutsche Physiologische Gesellschaft, Joint Meeting of the Deutsche Physiologische Gesellschaft with the Nederlandse Verenigung voor Fysiologie, 4–7 March 1992, Düsseldorf, Federal Republic of Germany, R1–R142

Abstracts of the Società Italiana di Fisiologia, XVIII Riunione Primaverile, 4–6 April 1991, Firenze, Italy, R143–R166

Abstracts of the Società Italiana di Fisiologia, XLIII Annual General Congress, 23–26 September 1991, Sorrento, Italy, R167–R196

Aalkjær C → Jensen PE
Acknowledgement to referees 1991 125
Ämmälä C, Berggren P-O, Bokvist K, Rorsman P: Inhibition of L-type calcium channels by internal GTP [γS] in mouse pancreatic β cells 72
Allen DG → Cook DI
Andre P, d'Ascanio P, Ioffe M, Pompeiano O: Microinjections of vasopressin in the locus coeruleus complex affect posture and vestibulospinal reflexes in decerebrate cats 376
Announcement 416
Arita M → Sato T
Aunis D → Bossu JL

Bardenheuer H → Thiel M
Baró I, Eisner DA: The effects of thapsigargin on $[Ca^{2+}]i$ isolated rat mesenteric artery vascular smooth muscle cells 115
Barry PH → Rajendra S
Baudet S, Noireaud J, Léoty C: Effect of haemodynamic pressure overload of the adult ferret right ventricle on inotropic responsiveness to external calcium and rest periods 603
Becq F, Fanjul M, Mahieu I, Berger Z, Gola M, Hollande E: Anion channels in a human pancreatic cancer cell line (Capan-1) of ductal origin 46
Bellanger AC → Dublineau I
Bérczi V → Szabó C
Berger Z → Becq F
Berggren P-O → Ämmälä C
Berke G → Binah O
Binah O, Marom S, Rubinstein I, Robinson RB, Berke G, Hoffman BF: Immunological rejection of heart transplant: how lytic granules from cytotoxic T lymphocytes damage guinea pig ventricular myocytes 172
Bindels RJM, Ramakers PLM, Dempster JA, Hartog A, van Os CH: Role of Na^+/Ca^{2+} exchange in transcellular Ca^{2+} transport across primary cultures of rabbit kidney collecting system 566
Blangé T → Jung DWG
Bodi I → Klöckner U
Bokvist K → Ämmälä C
Bolsover SR → Silver RA
Bonev A, Isenberg G: Arginine-vasopressin induces mode-2 gating in L-type Ca^{2+} channels (smooth muscle cells of the urinary bladder of the guinea-pig) 219
Borbély AA → Franken P
Bossu JL, Elhamdani A, Feltz A, Tanzi F, Aunis D, Thierse D: Voltage-gated Ca entry in isolated bovine capillary endothelial cells: evidence of a new type of BAY K 8644-sensitive channel 200
Bostrom TE → Pollock CA
Brachet P → Dumontier AM
Brănişteanu DD → Van der Kloot W
Brinkmeier H, Kaspar A, Wiethölter H, Rüdel R: Interleukin-2 inhibits sodium currents in human muscle cells 621
Brown DA → Caulfield MP
Brown DA → Robbins J
Burckhardt B-C, Frömter E: Pathways of NH_3/NH_4^+ permeation across *Xenopus laevis* oocyte cell membrane 83
Burckhardt B-C, Gögelein H: Small and maxi K^+ channels in the basolateral membrane of isolated crypts from rat distal colon: single-channel and slow whole-cell recordings 54
Burckhardt B-C, Kroll B, Frömter E: Proton transport mechanism in the cell membrane of *Xenopus laevis* oocytes 78
Bussières L → Shahedi M

Carnimeo L → De Giorgi A
Carraro U → Midrio M
Casavola V, Reshkin SJ, Murer H, Helmle-Kolb C: Polarized expression of Na^+/H^+ exchange activity in LLC-PK_1/PKE_{20} cells: II. Hormonal regulation 282
Catani C → Midrio M
Caulfield MP, Robbins J, Brown DA: Neurotransmitters inhibit the omega-conotoxin-sensitive component of Ca current in neuroblastoma × glioma hybrid (NG 108-15) cells, not the nifedipine-sensitive component 486
Chang F, Cohen IS: Mechanism of acetylcholine action on pacemaker current (i_f) in canine Purkinje fibers 389
Cloues R → Robbins J
Cohen IS → Chang F
Conte Camerino D → De Luca A
Cook DI, Wegman EA, Ishikawa T, Poronnik P, Allen DG, Young JA: Tetraethylammonium blocks muscarinically evoked secretion in the sheep parotid gland by a mechanism additional to its blockade of BK channels 167
Cooper KE → Goelst K
Corcelli A → De Giorgi A
Crabbé J → Granitzer M

Danieli-Betto D → Midrio M
d'Ascanio P → Andre P
Dechaux M → Shahedi M
De Giorgi A, Carnimeo L, Corcelli A: Mechanism of Cl^- transport in eel intestinal brush-border membrane vesicles 551
de Graaf H → Jung DWG
Deitmer JW: Bicarbonate-dependent changes of intracellular sodium and pH in identified leech glial cells 584
De Luca A, Conte Camerino D: Effects of aging on the mechanical threshold of rat skeletal muscle fibers 407
Dempster JA → Bindels RJM
de Rouffignac C → Di Stefano A
de Rouffignac C → Dublineau I
Deussen A → Sonntag M
Dilger JP, Liu Y: Desensitization of acetylcholine receptors in BC3H-1 cells 479
Di Stefano A, Greger R, de Rouffignac C, Wittner M: Active NaCl transport in the cortical thick ascending limb of Henle's loop of the mouse does not require the presence of bicarbonate 290
Dojat M, Harf A, Walton C, Macquin-Mavier I: High impedance mechanical ventilator for small animals: use of programmable controller 136
Doroshenko PA → Kostyuk PG
Doupnik CA, Pun RYK: Cyclic AMP-dependent phosphorylation modifies the gating properties of L-type Ca^{2+} channels in bovine adrenal chromaffin cells 61
Droogmans G → Lydrup M-L
Dublineau I, Pradelles P, de Rouffignac C, Elalouf J-M, Bellanger AC, Lagoutte S: Differential short-term desensitization to vasopressin, isoproterenol, glucagon, parathyroid hormone and calcitonin in the thick ascending limb of rat kidney 16
Düsterhöft S → Green HJ
Dumontier AM, Brachet P, Huneau JF, Tome D: Transport of putrescine in the isolated rabbit intestine 329
Duval A, Malécot CO, Pelhate M, Piek T: Poneratoxin, a new toxin from an ant venom, reveals an interconversion between two gating modes of the Na channels in frog skeletal muscle fibres 239
Duval A → Malécot CO
Dux L → Green HJ
Dyne M → Pollock CA

Eckert R → Paschke D
Eisner DA → Baró I
Elalouf J-M → Dublineau I
Elhamdani A → Bossu JL
Erlij D, Kaufman AI, Gersten L: Urinary Ca^{2+} and the regulation of K^+ secretion in toad bladder by neurohypophyseal hormones 23
Erratum 124

Fahlke Ch, Rüdel R: Giga-seal formation alters properties of sodium channels of human myoballs 248
Fanjul M → Becq F
Feltz A → Bossu JL
Field MJ → Pollock CA
Fischmeister R → Méry P-F
Fox JA, Steinberg RH: Voltage-dependent currents in isolated cells of the turtle retinal pigment epithelium 451
Franken P, Tobler I, Borbély AA: Cortical temperature and EEG slow-wave activity in the rat: analysis of vigilance state related changes 500
Fritzsch G → Ullrich KJ
Frömter E → Burckhardt B-C

Galler S, Rathmayer W: Shortening velocity and force/pCa relationship in skinned crab muscle fibres of different types 187
Gaßner B → Wojnowski L
Gennari FJ, Helmle-Kolb C, Murer H: Influence of extracellular pH and perfusion rate on Na^+/H^+ exchange in cultured opossum kidney cells 153
Gersten L → Erlij D
Gillis KD, Misler S: Single cell assay of exocytosis from pancreatic islet B cells 121
Glatz JFC, van der Vusse GJ, Havenith MG, van der Veen FH, Lucas CMHB, Penn OCKM, Wellens HJJ: Adaptation of energy metabolism of canine latissimus dorsi muscle in response to chronic electrical stimulation 1
Glossmann H → Romanin C
Gögelein H → Burckhardt B-C
Gögelein H → Siemer C
Goelst K, Mitchell D, MacPhail AP, Cooper KE, Laburn H: Fever response of sheep in the peripartum period to Gram-negative and Gram-positive pyrogens 259
Gola M → Becq F
Goldberg G, Shapira H, Oron Y: Inositol triphosphate may access calcium from stores not coupled to muscarinic receptors in *Xenopus* oocytes 313
Granitzer M, Nagel W, Crabbé J: Basolateral membrane conductance in A6 cells: effect of high sodium transport rate 559
Green HJ, Düsterhöft S, Dux L, Pette D: Metabolite patterns related to exhaustion, recovery and transformation of chronically stimulated rabbit fast-twitch muscle 359
Greger R → Di Stefano A
Greger R → Schlatter E
Grunicke H → Lang F
Grunicke H → Wöll E
Guerra L → Vilella S
Györy AZ → Pollock CA

Häussinger D → Lang F
Hamill OP → Wu G
Harf A → Dojat M
Hartog A → Bindels RJM
Havenith MG → Glatz JFC
Hayashi T, Shigetomi T, Ueda M, Kaneda T, Matsumoto T, Tokuno H, Tomita T: Effects of ammonium chloride on membrane currents of acinar cells dispersed from the rat parotid gland 297
Hellstrand P → Lydrup M-L
Helmle-Kolb C → Casavola V
Helmle-Kolb C → Gennari FJ
Helmle-Kolb C → Vilella S
Hescheler J → Scherübl H
Himpens B → Lydrup M-L
Hockberger PE → Nam SC
Hoffman BF → Binah O
Hoflacher J → Lang F
Hollande E → Becq F
Homma I → Onimaru H
Hülser DF → Paschke D
Huneau JF → Dumontier AM
Hwang TH → Jung JS

Ikeda K, Saito Y, Nishiyama A, Takasaka T: Na^+-Ca^{2+} exchange in the isolated cochlear outer hair cells of the guinea-pig studied by fluorescence image microscopy 493
Imaizumi Y → Muraki K
Ioffe M → Andre P
Isenberg G → Bonev A
Isenberg G → Klöckner U
Ishikawa T → Cook DI
Itagaki K → Klöckner U

Jensen PE, Mulvany MJ, Aalkjær C: Endogenous and exogenous agonist-induced changes in the coupling between $[Ca^{2+}]_i$ and force in rat resistance arteries 536
Jung DK → Jung JS
Jung DWG, Blangé T, de Graaf H, Treijtel BW: Cross-bridge stiffness in Ca^{2+}-activated skinned single muscle fibres 434
Jung JS, Hwang TH, Jung DK, Kim YK, Lee SH: AlF^-_4 and vanadate stimulate chloride secretion in rabbit colon by a Ca^{2+}-dependent mechanism 515
Jurkiewicz NK → Sanguinetti MC

Kaneda T → Hayashi T
Kaspar A → Brinkmeier H
Kaufman AI → Erlij D
Keizer HA → van der Meulen JH
Kettenmann H → Kirchhoff F
Kim YK → Jung JS
Kirchhoff F, Ohlemeyer C, Kettenmann H: A fast system for single cell physiology optimized for microscopes with water immersion objectives 573
Kitamura K → Xiong Z
Kiyosue T → Sato T
Klöckner U, Isenberg G: ATP suppresses activity of Ca^{2+}-activated K^+ channels by Ca^{2+} chelation 101
Klöckner U, Itagaki K, Bodi I, Schwartz A: β-Subunit expression is required for cAMP dependent increase of cloned cardiac and vascular calcium channel currents 413
Kostyuk PG, Lukyanetz EA, Doroshenko PA: Effects of serotonin and cAMP on calcium currents in different neurones of *Helix pomatia* 9
Kostyuk PG, Lukyanetz EA, Ter-Markosyan AS: Parathyroid hormone enhances calcium current in snail neurones — Simulation of the effect by phorbol esters 146
Kovách AGB → Szabó C
Kroll B → Burckhardt B-C
Kudo LH → Magaldi AJ
Kuipers H → van der Meulen JH
Kuriyama H → Xiong Z

Laborde K → Shahedi M
Laburn H → Goelst K
Lacy P, Murray-McIntosh RP, McIntosh JEA: Angiotensin II and acetylcholine differentially activate mobilization of inositol phosphates in *Xenopus laevis* ovarian follicles 127
Lagoutte S → Dublineau I
Lang F, Ritter M, Wöll E, Weiss H, Häussinger D, Hoflacher J, Maly K, Grunicke H: Altered cell volume regulation in ras oncogene expressing NIH fibroblasts 424
Lang F → Wöll E
Lazdunski M → Van Renterghem C
Lechêne P → Méry P-F
Lee SH → Jung JS
Léoty C → Baudet S
Levis RA → Rae JL
Liu Y → Dilger JP
Lohrmann E → Schlatter E
López-Barneo J → Schneggenburger R
Lucas CMHB → Glatz JFC
Lukyanetz EA → Kostyuk PG
Lydrup M-L, Himpens B, Droogmans G, Hellstrand P, Somlyo AP: Paradoxical decrease in cytosolic calcium with increasing depolarization by potassium in guinea-pig mesotubarium smooth muscle 428
Lynch JW → Rajendra S

MacPhail AP → Goelst K
Macquin-Mavier I → Dojat M
Maestrone E → Magnelli V
Magaldi AJ, Oyamaguchi MN, Kudo LH, Rocha AS: Phosphate transport in isolated rat inner medullary collecting duct 544
Magnelli V, Nobile M, Maestrone E: K^+ Channels in PC12 cells are affected by propofol 393
Mahieu I → Becq F
Malécot CO, Duval A: A macro cell-attached patch-clamp study of the properties of the Na current in the vicinity of the motor endplate region of frog single interosseal skeletal muscle fibres 231
Malécot CO → Duval A
Maly K → Lang F
Maly K → Wöll E
Marom S → Binah O
Matsumoto T → Hayashi T
McIntosh JEA → Lacy P
Megighian A → Midrio M
Méry P-F, Lechêne P, Fischmeister R: A loudspeaker-driven system for rapid and multiple solution exchanges in patch-clamp experiments 529
Midrio M, Danieli-Betto D, Megighian A, Velussi C, Catani C, Carraro U: Slow-to-fast transformation of denervated soleus

muscle of the rat, in the presence of an antifibrillatory drug 446
Misler S → Gillis KD
Mitchell D → Goelst K
Monos E → Szabó C
Mulvany MJ → Jensen PE
Muraki K, Imaizumi Y, Watanabe M: Ca-dependent K channels in smooth muscle cells permeabilized by β-escin recorded using the cell-attached patch-clamp technique 461
Murer H → Casavola V
Murer H → Gennari FJ
Murer H → Vilella S
Murray-McIntosh RP → Lacy P

Nagel W → Granitzer M
Nam SC, Hockberger PE: Divalent ions released from stainless steel hypodermic needles reduce neuronal calcium currents 106
Neiteler K → Ullrich KJ
Neuhaus R → Reber BFX
Neunlist M, Zou S-z, Tung L: Design and use of an "optrode" for optical recordings of cardiac action potentials 611
Nishiyama A → Ikeda K
Nobile M → Magnelli V
Noireaud J → Baudet S
Noma A → Takano M
Nosek TM → Zhu Y

Oberleithner H → Wojnowski L
Ogata N, Tatebayashi H: Comparison of two types of Na^+ currents with low-voltage-activated T-type Ca^{2+} current in newborn rat dorsal root ganglia 590
Ohlemeyer C → Kirchhoff F
Onimaru H, Homma I: Whole cell recordings from respiratory neurons in the medulla of brainstem-spinal cord preparations isolated from newborn rats 399
Oron Y → Goldberg G
Oyamaguchi MN → Magaldi AJ

Paschke D, Eckert R, Hülser DF: High-resolution measurements of gap-junctional conductance during perfusion with anti-connexin antibodies in pairs of cultured mammalian cells 87
Pelhate M → Duval A
Penn OCKM → Glatz JFC
Pette D → Green HJ
Phillips SK, Woledge RC: A comparison of isometric force, maximum power and isometric heat rate as a function of sarcomere length in mouse skeletal muscle 578
Piek T → Duval A
Pitkänen E, Pitkänen OM: Renal tubular reabsorption of 1,5-anhydro-D-glucitol and D-mannose in vivo in the rat 367
Pitkänen OM → Pitkänen E
Pollock CA, Bostrom TE, Dyne M, Györy AZ, Field MJ: Tubular sodium handling and tubuloglomerular feedback in compensatory renal hypertrophy 159
Pompeiano O → Andre P
Poronnik P → Cook DI
Pradelles P → Dublineau I
Pun RYK → Doupnik CA

Rae JL, Levis RA: A method for exceptionally low noise single channel recordings 618
Rajendra S, Lynch JW, Barry PH: An analysis of Na^+ currents in rat olfactory receptor neurons 342
Ramakers PLM → Bindels RJM
Rathmayer W → Galler S
Reber BFX, Neuhaus R, Reuter H: Activation of different pathways for calcium elevation by bradykinin and ATP in rat pheochromocytoma (PC12) cells 213
Reshkin SJ → Casavola V
Reuter H → Reber BFX
Ring A: Monitoring the surface tension of lipid membranes by a bubble method 264
Ritter M → Lang F
Robbins J, Cloues R, Brown DA: Intracellular Mg^{2+} inhibits the IP_3-activated $I_{K(Ca)}$ in NG108-15 cells [Why intracellular citrate can be useful for recording $I_{K(Ca)}$] 347
Robbins J → Caulfield MP
Robinson RB → Binah O
Rocha AS → Magaldi AJ
Romanin C, Seydl K, Glossmann H, Schindler H: The dihydropyridine niguldipine inhibits T-type Ca^{2+} currents in atrial myocytes 410
Rorsman P → Ämmälä C
Rubinstein I → Binah O
Rüdel R → Brinkmeier H
Rüdel R → Fahlke Ch
Rumrich G → Ullrich KJ

Sachs C → Shahedi M
Saito Y → Ikeda K
Sanguinetti MC, Jurkiewicz NK: Role of external Ca^{2+} and K^+ in gating of cardiac delayed rectifier K^+ currents 180
Sato T, Kiyosue T, Arita M: Inhibitory effects of palmitoylcarnitine and lysophosphatidylcholine on the sodium current of cardiac ventricular cells 94
Scherübl H, Hescheler J: Transient membrane hyperpolarizations due to spontaneous fluctuations of the cytosolic Ca^{2+} in osteoblast-like cells 109
Schindler H → Romanin C
Schlatter E, Lohrmann E, Greger R: Properties of the potassium conductances of principal cells of rat cortical collecting ducts 39
Schneggenburger R, López-Barneo J: Patch-clamp analysis of voltage-gated currents in intermediate lobe cells from rat pituitary thin slices 302
Schneider F → Szabó C
Schrader J → Sonntag M
Schwartz A → Klöckner U
Seydl K → Romanin C
Shahedi M, Laborde K, Bussières L, Dechaux M, Sachs C: Protein kinase C activation causes inhibition of Na/K-ATPase activity in Madin-Darby canine kidney epithelial (MDCK) cells 269
Shapira H → Goldberg G
Shigetomi T → Hayashi T
Siemer C, Gögelein H: Activation of nonselective cation channels in the basolateral membranes of rat distal colon crypt cells by prostaglandin E_2 319
Silberberg SD, van Breemen C: A potassium current activated by lemakalim and metabolic inhibition in rabbit mesenteric artery 118
Silver RA, Whitaker M, Bolsover SR: Intracellular ion imaging using fluorescent dyes: artefacts and limits to resolution 595
Somlyo AP → Lydrup M-L
Sonntag M, Deussen A, Schrader J: Role of nitric oxide in local blood flow control in the anaesthetized dog 194
Stassen FRM → van der Meulen JH
Steigner W → Wojnowski L
Steinberg RH → Fox JA
Szabó C, Bérczi V, Schneider F, Kovách AGB, Monos E: Role of endothelium in the response of the vein wall to magnesium withdrawal 140

Takano M, Noma A: Distribution of the isoprenaline-induced chloride current in rabbit heart 223
Takasaka T → Ikeda K
Tanzi F → Bossu JL
Tatebayashi H → Ogata N
Ter-Markosyan AS → Kostyuk PG
Thiel M, Bardenheuer H: Regulation of oxygen radical production of human polymorphonuclear leukocytes by adenosine: the role of calcium 522
Thierse D → Bossu JL
Tobler I → Franken P
Tokuno H → Hayashi T
Tome D → Dumontier AM
Tomita T → Hayashi T
Treijtel BW → Jung DWG
Tung L → Neunlist M

Ueda M → Hayashi T
Ullrich KJ, Rumrich G, Neiteler K, Fritzsch G: Contraluminal transport of organic cations in the proximal tubule of the rat kidney. II. Specificity: anilines, phenylalkylamines (catecholamines), heterocyclic compounds (pyridines, quinolines, acridines) 29

van Breemen C → Silberberg SD
Van der Kloot W, Brănişteanu DD: Effects of activators and inhibitors of protein kinase A on increases in quantal size at the frog neuromuscular junction 336
van der Meulen JH, Kuipers H, Stassen FRM, Keizer HA, van der Vusse GJ: High energy phosphates and related compounds, glycogen levels and histology in the rat tibialis anterior muscle after forced lengthening and isometric exercise 354
van der Veen FH → Glatz JFC
van der Vusse GJ → Glatz JFC
van der Vusse GJ → van der Meulen JH
van Os CH → Bindels RJM
Van Renterghem C, Lazdunski M: A small conductance charybdotoxin-sensitive, apamin-resistant Ca^{2+}-activated K^+ channel in aortic smooth muscle cells (A7r5 line and primary culture) 417